

Methods for Production of Proteins

ABSTRACT

5 The current invention provides methods for producing a polypeptide as inclusion bodies in bacterial host cells. The present methods are carried out by forming a gene construct comprising the genetic sequence encoding a polypeptide operatively linked to that of an inclusion partner protein, such as *E. coli* thioredoxin or a modified *E. coli* thioredoxin, such that host cells comprising the gene construct produce the polypeptide as intracellular inclusion bodies. The methods of the present invention facilitate the rapid isolation and purification of recombinant proteins. In addition, the present methods may be useful for producing polypeptides or proteins which are small and are typically difficult to express, as well as those proteins that are toxic to host cells such as *E. coli*. The present invention also provides plasmids, vectors and host cells to be used in the present invention for production of polypeptides, and methods of production of polypeptides using these vectors and host cells. The invention further provides methods for producing protein molecular weight ladders for use in protein gel electrophoresis, as well as proteins and protein molecular weight ladders produced by these methods.

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